CLAIMS:

1. A method of transmitting, via an optical transmission line, digital data which includes data of a first type and data of a second type, the second type being data associated with control of errors in corresponding data of the first type at least, wherein;

the digital data is transmitted using a plurality of wavelength division multiplexed optical transmission channels such that data of the first type is transmitted via a channel different to that via which data of the second type is transmitted.

2. A method according to claim 1 wherein, data of said first type is transmitted substantially synchronously with data of said second type to which it corresponds.

3. A method according to claim 1 wherein, data is transmitted in association with alignment data with which data of said first data type and data of said second type may be identified as corresponding to each other.

4. A method according to claim 1 wherein, data of the second type is derived via forward error correction (FEC) coding of data of the first type.

5. A method according to claim 1 wherein, data of the first type is segmented into first data blocks and data of the second type is segmented into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks.

6. A method according to claim 5 wherein corresponding first data blocks and second data blocks are transmitted substantially synchronously.

7. A method according to claim 5 wherein corresponding first data blocks and second data blocks are transmitted in association with alignment data with which said first and second data blocks may be identified as corresponding to each other.

8. A method according to claim 5 wherein,
each one of the second data blocks is derived from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks.

9. A method of receiving a digital data transmission transmitted via an optical transmission line according to claim 1, wherein the received data of the second type is used in detecting or correcting errors in the received data.

10. A method of receiving a digital data transmission according to claim 9 wherein, data of said first data type is received substantially synchronously with the data of said second said data type to which it corresponds.

11. A method of receiving a digital data transmission according to claim 9 wherein, the received data of both the first data type and the second data type includes alignment data, with which received data of said first data type and received data of said second data type may be identified as corresponding to each other.

12. A method of receiving a digital data transmission

according to claim 9 wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks.

13. A method of receiving a digital data transmission according to claim 12 wherein, a given first data block is received substantially synchronously with the said second data block to which it corresponds.

14. A method of receiving a digital data transmission according to claim 12 wherein, the received data includes first and second data blocks, each block having associated alignment data, wherein the alignment data are employed in identifying which of the received first and second data blocks are corresponding blocks.

15. A method of receiving a digital data transmission according to claim 9 wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein each one of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks.

16. Apparatus for transmitting via an optical transmission line, digital data which includes data of a first type and data of a second type, the data of the second type being associated with control of errors in corresponding data of the first type at least, the apparatus including:
a data encoder including;

input means for receiving data of the first type, and

encoding means for deriving data of said second data type from said first data type, and output means for outputting said first and second data types via separate data channels; and,

an optical transmitting means for transmitting data of said first type and corresponding data of said second type via different wavelength division multiplexed optical transmission channels.

17. Apparatus according to claim 16 wherein; the data encoder is operable to output data of said first type and corresponding data of said second type substantially synchronously.

18. Apparatus according to claim 16 wherein; the data encoder is operable to output each of said first data type and said corresponding second data type in association with alignment data with which data of said first type and corresponding data of said second type may be identified as corresponding to each other.

19. Apparatus according to claim 16 wherein; said second data type is derived by said data encoder via forward error correction (FEC) coding of data of said first type.

20. Apparatus according to claim 16 wherein; said data encoder is operable to segment data of said first type into first data blocks and to segment corresponding data of said second type into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks.

21. Apparatus according to claim 20 wherein; said encoder is operable to output corresponding first data blocks and second data blocks substantially synchronously.

22. Apparatus according to claim 20 wherein; said encoder is operable to output corresponding first data blocks and second data blocks in association with alignment data with which said first and second data blocks may be identified as corresponding to each other.

23. Apparatus according to claim 20 wherein; said encoding means is operable to derive each one of the second data blocks from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks.

24. Apparatus for receiving via an optical transmission line, digital data which includes data of a first type and data of a second type, data of the second type being data associated with control of errors in corresponding data of the first type at least, the apparatus including:

an optical receiver including receiving means for receiving optical data signals of the first data type and optical data signals of the second data type via different wavelength division multiplexed optical transmission channels;

a data decoder including input means for receiving data of said first type and data of said second type from said receiving means, wherein;

the data decoder includes means with which received data of the first type and corresponding data of the second type are identified as corresponding to each other.

25. Apparatus according to claim 24, wherein the data decoder

further includes means for using received data of the second type in detecting or correcting errors in the received data.

26. Apparatus according to claim 24 wherein, said data decoder is operable to receive data of said first data type substantially synchronously with the data of said second data type to which it corresponds.

27. Apparatus according to claim 24 wherein, the received data of both the first data type and the second data type includes alignment data with which received data of said first data type and received data of said second data type may be identified as corresponding to each other and said data decoder is operable to identify data of the first data type and data of the second data type as corresponding to each other using said alignment data.

28. Apparatus according to claim 24 wherein, the data decoder is operable to receive data consisting of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks.

29. Apparatus according to claim 28 wherein, said data decoder is operable to receive a given first data block substantially synchronously with the said second data block to which it corresponds.

30. Apparatus according to claim 28 wherein, the received

data includes first and second data blocks, each block having associated alignment data, wherein the data decoder is operable to employ said alignment data in identifying which of the received first and second data blocks are corresponding blocks.

31. Apparatus according to claim 24 wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein each one of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks, and said data decoder is operable to employ a given one of said second data blocks to detect or correct errors in the first data block to which said given one second data block corresponds.

32. A method of transmitting, via an optical transmission line, digital data which includes data of a first type and data of a second type, the second type being data associated with control of errors in corresponding data of the first type at least, wherein;

the digital data is transmitted using a plurality of wavelength division multiplexed optical transmission channels such that data of the first type is transmitted via a channel different to that via which data of the second type is transmitted,

wherein, data of the first type is segmented into first data blocks and data of the second type is segmented into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks,

wherein, corresponding first data blocks and second data blocks are transmitted substantially synchronously,

wherein, corresponding first data blocks and second data blocks are transmitted in association with alignment data with which said first and second data blocks may be identified as corresponding to each other,

wherein, each one of the second data blocks is derived from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks.

33. A method of receiving a digital data transmission transmitted via an optical transmission line according to claim 32, wherein the received data of the second type is used in detecting or correcting errors in the received data,

wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks,

wherein, a given first data block is received substantially synchronously with the said second data block to which it corresponds,

wherein, the received data includes first and second data blocks, each block having associated alignment data, wherein the alignment data are employed in identifying which of the received first and second data blocks are corresponding blocks.

34. Apparatus for transmitting via an optical transmission line, digital data which includes data of a first type and data of a second type, the data of the second type being associated with control of errors in corresponding data of the first type at least, the apparatus including:

a data encoder including;

input means for receiving data of the first type, and encoding means for deriving data of said second data type from said first data type, and output means for outputting said first and second data types via separate data channels; and,

an optical transmitting means for transmitting data of said first type and corresponding data of said second type via different wavelength division multiplexed optical transmission channels,

wherein; said data encoder is operable to segment data of said first type into first data blocks and to segment corresponding data of said second type into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks,

wherein; said encoder is operable to output corresponding first data blocks and second data blocks substantially synchronously,

wherein; said encoder is operable to output corresponding first data blocks and second data blocks in association with alignment data with which said first and second data blocks may be identified as corresponding to each other,

wherein; said encoding means is operable to derive each one of the second data blocks from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks.

35. Apparatus for receiving via an optical transmission line, digital data which includes data of a first type and data of a second type, data of the second type being data associated with control of errors in corresponding data of the first type at least, the apparatus including:

an optical receiver including receiving means for

receiving optical data signals of the first data type and optical data signals of the second data type via different wavelength division multiplexed optical transmission channels;

a data decoder including input means for receiving data of said first type and data of said second type from said receiving means, wherein;

the data decoder includes means with which received data of the first type and corresponding data of the second type are identified as corresponding to each other,

wherein, the data decoder is operable to receive data consisting of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks,

wherein, said data decoder is operable to receive a given first data block substantially synchronously with the said second data block to which it corresponds,

wherein, the received data includes first and second data blocks, each block having associated alignment data, wherein the data decoder is operable to employ said alignment data in identifying which of the received first and second data blocks are corresponding blocks.